

Claims

1. A plate for use in wet offset printing, comprising at its surface ink-accepting surfaces corresponding to patterns to be printed; at least part of
5 said ink-accepting surfaces being lightened, *i.e.* including small non ink-accepting lightening surfaces, characterized in that over at least part of said lightened ink-accepting surfaces, said small non ink-accepting lightening surfaces are distributed in at least two groups:
- a first group of small non ink-accepting surfaces with an area
10 (areas) sufficient to be effective *per se* and in a quantity sufficient to lighten the ink-accepting surface(s) involved in lightening by at least 4%; and
 - a second group of small non ink-accepting surfaces, not effective
15 *per se* because their area(s) is (are) too small ; the mean area of said small non ink-accepting surfaces of said second group in general being less than 2/3 of the mean area of said small non ink-accepting surfaces of said first group;
- said small non ink-accepting surfaces of said first and second groups being distributed so as to minimize, advantageously avoid, any moiré effects.
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2. The plate according to claim 1, characterized in that said small non ink-accepting surfaces of said first and/or second groups are distributed in a random manner or in conventional screens and, for each color, in the orientation employed for the screen for said color.
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3. The plate according to claim 1 or claim 2, characterized in that when printing patterns with a stochastic screen, the small non ink-accepting surfaces of said first and second groups distributed in a (several) conventional screen(s) are orientated for each color in the orientation
30 normally used for printing said color.
4. The plate according to any one of claims 1 to 3, characterized in that the mean area of said small non ink-accepting surfaces of said second group is in the range 1/4 to 2/3, advantageously in the range 1/4 to 1/2 of the mean area of said small non ink-accepting surfaces of said first group.
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5. The plate according to any one of claims 1 to 4, characterized in that:
- when printing patterns with an amplitude modulation screen, the area(s) of said small non ink-accepting surfaces of said first group remains (remain) smaller than the 95% white dot value, and advantageously smaller than the 98% white dot value of said screen; or
 - when printing patterns with a stochastic screen, the area(s) of said small non ink-accepting surfaces of said first group is (are) always less than three times the area of the dot of said screen, and generally in the range 0.5 times to 2 times said area.
6. The plate according to any one of claims 1 to 5, characterized in that said small non ink-accepting surfaces of said first group are present in a quantity sufficient to lighten the ink-accepting surface(s) concerned with lightening by 4% to 20%, advantageously by 6% to 12%.
7. The plate according to any one of claims 1 to 6, characterized in that said small non ink-accepting surfaces of said second group are present in a quantity sufficient to lighten the ink-accepting surface(s) concerned with lightening by 4% to 35%, advantageously by 8% to 20%.
8. The plate according to any one of claims 1 to 7, characterized in that the percentage lightening of its ink-accepting surfaces is not constant.
9. The plate according to any one of claims 1 to 8, characterized in that none of said small non ink-accepting surfaces of said second group is in contact with a small non ink-accepting surface of said first group.
10. The plate according to any one of claims 1 to 9, characterized in that each of said small non ink-accepting surfaces of said first and second groups is inside the ink-accepting surface within which it is present.
11. The plate according to any one of claims 1 to 10, characterized in that said small non ink-accepting surfaces of said first group have the same area and/or, advantageously and, said small non ink-accepting surfaces of said second group have the same area.

12. A process for preparing a plate according to any one of claims 1 to 11, characterized in that it comprises copying said plate to generate the ink-accepting surfaces corresponding to the patterns to be printed on the surface of said plate as well as said small non ink-accepting lightening surfaces within said ink-accepting surfaces; said small non ink-accepting surfaces being copied:

- by a technique for exposing said plate through at least one film and/or a technique for exposing a precursor web of positive pre-sensitized plates through the opaque wall of a tube; and/or
- by a technique for directly exposing said plate with beams controlled by software; and/or
- by a projection technique.

13. A wet offset printing process, comprising:

- copying a plate, generating ink-accepting surfaces on the surface of said plate corresponding to the patterns to be printed and including small non ink-accepting lightening surfaces;
- fixing said copied plate to a plate cylinder;
- wetting then inking said fixed copied plate or inking it directly with an ink based on an ink/water mixture; and
- transferring the ink held on said lightened ink-accepting surfaces onto the blanket then onto the substrate to be printed in succession;

characterized in that the copy of said plate generates a plate according to any one of claims 1 to 11.